Female Athletic Triad: *When Sports and Exercise Become Unhealthy*

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Dr. Brad Bernardini is the first surgeon in the region to perform both the All-Inside, and Double Bundle ACL reconstruction techniques. He has also been honored as an Associate Masters Instructor of knee surgery by the Arthroscopy Association of North America, where he instructs Orthopaedic Surgeons from across the nation in advanced surgical techniques.

Dr. Bernardini is in his 4th year of practice and has been published in his field and honored for his academic achievement. He is an ex-collegiate athlete and serves as a member of the United States Ski and Snowboard Team Physician Pool Program, as well as the head team physician for Delsea Regional High School. To review a copy of his latest publication in the American Journal of Sports Medicine on Knee Joint Instability, please visit our website at www.southjerseycenter.com.

By Brad Bernardini, MD, Orthopedic Surgeon, Sports Medicine Specialist, USA Triathlon Certified Coach

Sports and exercise are healthy activities for young girls and women of all ages. But a female athlete who focuses on being thin or lightweight may eat too little and/or exercise too much. Doing this can cause long-term damage to health, or even worse. It can also hurt athletic performance and/or make it necessary to limit or stop exercise.

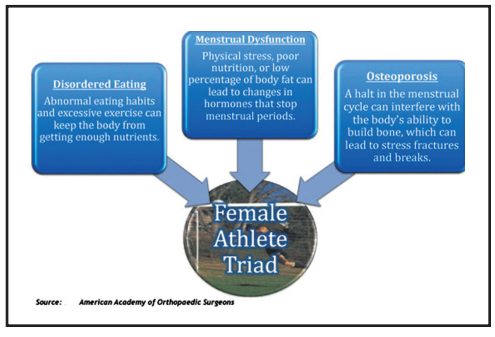
Three interrelated illnesses may develop when a young woman goes to extremes in dieting or exercise. Together, these conditions are known as the "female athletic triad."

The three conditions are:

Eating Disorder
Abnormal eating habits (i.e., anorexia, crash diets, binge eating) or excessive exercise keeps the body from getting enough nutrition.

Menstrual Dysfunction
Poor nutrition, low calorie intake, high-energy demands, physical and emotional stress, or low percentage of body fat can lead to hormonal changes that stop menstrual periods (amenorrhea).

Osteoporosis
Lack of periods disrupts the body's bone-building processes and weakens the skeleton, making bones more likely to break.



Females at Risk

Females in any sport can develop one or more parts of the triad. At greatest risk are those in sports that reward being thin for appearance (i.e., Figure skating, Gymnastics, Dance) or improved performance (i.e., Distance Running, Rowing).

Fashion trends and advertising often encourage women to try to reach unhealthy weight levels. Some female athletes suffer low self-esteem or depression, and may focus on weight loss because they think they are heavier than they actually are. Others feel pressure to lose weight from athletic coaches or parents.

Female athletes should consider these questions:

- Are you dissatisfied with your body?
- Do you strive to be thin?
- Do you continuously focus on your weight?

If the answers are yes, you may be at risk for developing abnormal patterns of eating food (disordered eating), which can lead to menstrual dysfunction and early osteoporosis.

Disordered Eating

Although they usually do not realize or admit that they are ill, people with disordered eating have serious and complex disturbances in eating behaviors. They are preoccupied with body shape and weight and have poor nutritional habits.

Females are 10 times more likely to have disordered eating compared with males, and the problem is especially common in females who are athletic. The illness takes many forms. Some people starve themselves (anorexia nervosa) or engage in cycles of overeating and purging (bulimia).

Others severely restrict the amount of food they eat, fast for prolonged periods of time or misuse diet pills, diuretics, or laxatives. People with disordered eating may also exercise excessively to keep their weight down.

Disordered eating can cause many problems, including dehydration, muscle fatigue, and weakness, an erratic heartbeat, kidney damage, and other serious conditions. Not taking in enough calcium can lead to bone loss. It is especially bad to lose bone when you are a child or teenager because that is when your body should be building bone. Hormone imbalances can lead to more bone loss through menstrual dysfunction.

Menstrual Dysfunction

Missing three or more periods in a row is cause for concern. With normal menstruation, the body produces estrogen, a hormone that helps to keep bones strong. Without a menstrual cycle (amenorrhea), the level of estrogen may be lowered, causing a loss of bone density and strength (premature osteoporosis).

If this happens during youth, it may become a serious problem later in life when the natural process of bone mineral loss begins after menopause. Amenorrhea may also cause stress fractures.

Osteoporosis

Bone tissue wears away, making your skeleton fragile. Low bone mass puts you at increased risk for fractures. Especially stress fractures involving the foot, shin, and hip.

Diagnosis

Recognizing the female athletic triad is the first step toward treating it. See your doctor right away if you think you might have disordered eating, miss several menstrual periods or get a stress fracture in sports.

Give the doctor your complete medical history, including:

- What you do for physical activity and what you eat for nutrition.
- How old you were when you began to menstruate and whether you usually have regular periods.
- If you have ever had stress fractures or other injuries.
- Any changes (up or down) in your weight.
- Any medications you are taking or symptoms of other medical problems.
- Family history of diseases (i.e., thyroid disease, osteoporosis).
- Factors that cause stress in your life.

The doctor will give you complete physical examination and may use laboratory tests to check for pregnancy, thyroid disease, and other medical conditions. In some cases you may also get a bone density test.

Treatment

Treatment for the female athletic triad often requires help from a team of medical professionals including your doctor, a nutritionist, and a psychological counselor. It is individualized for each athlete, and many times does not require stopping your sport of choice.